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ABSTRACT

Designed to accompany the Project CONSTRUCT Validation Survey, this booklet begins with an overview that presents answers to commonly asked questions about the project, a process-oriented curriculum and assessment framework for working with children aged three to seven. The remainder of the booklet is divided into three sections which correspond to the three developmental domains addressed by the project: sociomoral, cognitive, and language development. An introduction to each of the three domains is offered. Introductions provide a description of the domain and a context for the domain's proposed goals for children. Each introduction is followed by a set of curriculum and assessment specifications for the proposed goals within that domain. Each specification includes a description of a particular goal and a list of possible indicators that can be used to determine whether the goal is being attained. For most indicators, examples or elaborations are given. Thus, a specification provides the parameters for teaching and assessing the goal. Purposes of the survey are to validate the project's proposed goals for children and gather suggestions for the improvement of related material, which is included in the booklet. After respondents read these materials, they are prepared to respond to the survey. A total of 90 references are cited. (RH)

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Project CONSTRUCT

Curriculum and Assessment Specifications

Validation Survey Edition

Center for Educational Assessment
and
Missouri Department of Elementary and Secondary Education
May 1989

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How to Use This Booklet

This booklet is designed to accompany the *Project CONSTRUCT Validation Survey*. One purpose of the survey is to validate the project's proposed goals for children; the curriculum and assessment specifications in this booklet describe these goals. Another purpose of the survey is to gather suggestions for the improvement of related material which is also included in this booklet. Thus, you should read the entire booklet before responding to the survey.

The booklet begins with an overview which presents answers to commonly asked questions about Project CONSTRUCT. The overview is printed on grey paper.

The remainder of the booklet is divided into three sections which correspond to the three developmental domains addressed by the project: Sociomoral, Cognitive, and Language. There is an introduction to each of the three domains; each introduction is printed on pink, yellow, or green paper, respectively. An introduction provides a description of the domain and a context within which to place the domain's proposed goals for children.

Following each introduction is a set of curriculum and assessment specifications for the proposed goals within that domain. There is a curriculum and assessment specification for each goal; each specification is printed on white paper. A specification includes a description of the goal and a list of possible indicators that can be used to determine whether it is being attained. For most indicators, examples and/or elaborations are given. Thus, a specification provides the parameters for teaching and assessing the goal. (Note: Related goals within the Sociomoral and Cognitive Domains are divided into areas.)

When you have read the overview, introductions, and specifications, you will be ready to respond to the survey. Please complete all four parts:

I. enter information about your current professional position and county-district code;
II. evaluate the overview and the three introductions;
III. rate each proposed goal in terms of its importance for inclusion in the curriculum and assessment;
IV. write any comments about or suggestions for improvement of the project material on separate piece of paper and enclose it with the survey.

If you have questions about completing the survey, call the Center for Educational Assessment at (314) 882-4694, and a member of the project staff will assist you.

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Project CONSTRUCT

Validation Survey Edition

Overview

What is Project CONSTRUCT?

Project CONSTRUCT is a process-oriented curriculum and assessment framework for working with children aged three through seven. It also incorporates resources for parent participation, teacher and environmental evaluations, and curricular content. Schools and other interested groups may use the project materials on a voluntary basis.

Who is developing Project CONSTRUCT?

Early childhood educators, administrators, subject area specialists, and professors generated the framework. A number of regional and national consultants participated in the project design and content, as did many state committee members, field trial and pilot study participants. The Missouri Department of Elementary and Secondary Education, in conjunction with the Center for Educational Assessment at the University of Missouri-Columbia, directs the project.

Why was Project CONSTRUCT initiated?

A dramatic national controversy exists over the goals of early childhood education, from administrators who struggle to define what excellence in early education means for their districts, to parents who are anxious about what their children need to know in order to be successful in their early years of formal education, to teachers who feel conflicting pressures from various groups and their own personal and professional convictions.

Although the Missouri Excellence in Education Act of 1985 mandated the identification of Core Competencies and Key Skills for students in elementary and secondary grades, it left open the articulation of goals for young children. Many Missouri educators requested guidance in identifying developmentally appropriate goals and assessments for this age group. All of these legitimate concerns led to the genesis of Project CONSTRUCT.

How does Project CONSTRUCT work?

The framework guides rather than dictates curricular decisions, and it values teachers as professional decision-makers who use their knowledge and observations of young children to enrich teaching practice. To that end, approximately thirty goals are proposed in three interrelated developmental domains: Sociomoral, Cognitive, and Language. It is recognized that Physical Development, as well as continuing health and growing observation of good health practices, influences the three domains addressed by the project. A curricular guide will aid teachers in organizing the classroom and planning activities. An assessment system consisting of two components will help teachers document children's development. The formative evaluation component will be embedded in everyday classroom happenings; the standardized component can be used to determine which children are eligible for special services.

How do Project CONSTRUCT goals relate to the state Core Competencies and Key Skills for grades two through ten?

Both sets of competencies share two assumptions: positive learning outcomes result from the alignment of curriculum, instruction, and assessment; and all children can be highly successful in school.

The goals of Project CONSTRUCT function as a bridge between the education parents deliver in the home, as exemplified in the *Parents as Teachers* objectives, and the Core Competencies and Key Skills identified for second grade. They reflect the continuation of important developmental and academic goals as well as an increasing emphasis on literacy and mathematical reasoning.

Project CONSTRUCT is not organized by traditional subject matter; however, the foundations of academic learning are embedded in and integrated throughout the framework. For example, sociomoral goals focus on children's understanding of the social world and the function of rules within a democratic society. Not only do these goals serve as a foundation for social science/civics, but they also make a major contribution to cognition and language. Cognitive goals are the basis for logical thinking. Language goals center on the child's developing ability to represent and communicate ideas and feelings through words.

Project CONSTRUCT provides a solid developmental foundation for later knowledge and skill acquisition. Its goals and indicators are closely related to second grade Core Competencies and Key Skills, as indicated in the examples presented in the table below.

Project CONSTRUCT	Core Competencies and Key Skills
Language	*Reading/Language Arts*
Goal: develop a sense of story	Core Competency: recognize or demonstrate an understanding of narrative and expository text by retelling, answering, or formulating questions and thinking critically (C)
Indicator: tells stories with traditional beginnings, middles, and ends	Key Skill: recall from passage or story such information as setting, characters, sequence of events, and narrator (C-1)
Indicator: distinguishes fact from fantasy	Key Skill: distinguish fact from fantasy and justify response (C-3)
Indicator: predicts outcomes of stories	Key Skill: predict the outcome of a story (C-7)
Cognitive	*Mathematics*
Goal: construct spatial and temporal relationships	Core Competency: apply the concept of measurement to the physical world (D)
Indicator: uses standard and non-standard measurement devices to mark events in time	Key Skill: tell and record time by fifteen-minute intervals using a standard clock (D-1)
Indicator: measures the size and volume of objects using standard and non-standard units	Key Skill: measure the lengths, weights (mass), volume, and capacity using non-standard and standard units (D-5)

Are school districts required to implement Project CONSTRUCT?

No; these resources will be available on a voluntary basis to school districts and other organizations working with young children.

Can a district use the assessment system without implementing the curriculum?

Yes, but both the formative and standardized components of the system are aligned with curriculum goals. It is possible to use the standardized component to determine which children are eligible for Chapter 1 or other special services.

What are the guiding principles of Project CONSTRUCT?

Project CONSTRUCT is based on: (1) the theory that children actively construct knowledge and values by acting upon the physical and social world; and (2) the accumulating body of knowledge about how young children learn. The long-term objectives of this approach are consistent with the goals of a democracy and the nature of human development. They represent what parents, educators, and other groups advocate as outcomes of education. Recent support for this approach is articulated in national position statements and publications of organizations such as the National Association for the Education of Young Children, the National Council of Teachers of Mathematics, the National Council for the Social Studies, the National Science Teachers Association, the International Reading Association, the National Association of State Boards of Education, the National Association of Elementary Principals, and the Association for Supervision and Curriculum Development.

How does Project CONSTRUCT address young children's characteristics and needs?

The aim of Project CONSTRUCT is to foster the development of intellectual and moral autonomy. Autonomy in this framework means the ability to make judgments of true/false (intellectual) or right/wrong (moral) for oneself, by taking into account relevant facts and opinions. In other words, the long-term goal is to foster young children's abilities to become self-directed, self-reliant, sensitive to others' views, and to achieve personal, social, and academic success. In order for this to happen, children need to gain some sense of control over their lives, to make meaningful choices, and to interact with peers, adults, and objects in the world. These are more readily achieved if the following principles of child development are acknowledged and practiced:

Principle: Children actively construct knowledge and values by acting upon the physical and social world. Because their thoughts are still closely tied to action, they require a physically and mentally active learning environment.

Practices: Provide opportunities for exploration, interaction, and experimentation with peers, adults, and objects; help children reflect on and evaluate their thoughts and actions; create activities which allow children to make use of their knowledge in new situations; foster opportunities for children to cooperate and consider different points of view; permit children to use concrete actions to inform their decision-making.

Principle: In their universal struggle to understand the world, young children's thinking will contain predictable errors. These errors represent an advancement in children's thinking.

Practices: Value children's imaginative but often incorrect and illogical answers and ideas; encourage peer interaction to discuss, question, and challenge each other's ideas; allow children to experience the consequences of their ideas and actions within reasonable constraints; facilitate children finding answers to their own questions; analyze how and why children respond in certain ways.

Principle: Children have an intrinsic desire to make sense of the world. What they genuinely need to know and are genuinely interested in knowing helps them learn.

Practices: Create learning activities meaningful and interesting to young children; create conditions in which children need to construct, develop, and apply additional knowledge or skills; provide activities which offer children choices and opportunities to function as planners, decision-makers, and creators; allow sufficient time for children to pursue their ideas.

Principle: Developmental domains are interactive and interrelated, each influencing the other. It is within the sociomoral environment that cognition and language are furthered.

Practices: Emphasize an integrated approach to teaching; integrate "academic" instruction within contexts meaningful to the child; promote curriculum goals through activities which promote various aspects of development; view learning as dynamic and organic rather than static and linear.

What if I am interested in using Project CONSTRUCT's approach?

Project CONSTRUCT materials will be available in September 1990. In addition; comprehensive state and regional inservice opportunities, including demonstration classroom sites, will be available to teachers, administrators, and others interested in using this framework. Address inquiries about Project CONSTRUCT to:

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Department of Elementary and Secondary Education
P.O. Box 480
Jefferson City, MO 65102
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Project CONSTRUCT

Validation Survey Edition

Introduction to Sociomoral Development

> Full development of the personality in its most intellectual aspects is indissoluble from the whole group of emotional, ethical, or social relationships that make up the school life.... In reality, education constitutes an indissoluble whole, and it is not possible to create independent personalities in the ethical area if the individual is also subjected to intellectual constraint to such an extent that he must restrict himself to learning by rote without discovering the truth for himself. If he is intellectually passive, he will not know how to be free ethically. Conversely, if his ethics consist exclusively in submission to adult authority, and if the only social exchanges that make up the life of the class are those that bind each student individually to a master holding all power, he will not know how to be intellectually active.
>
> —J. Piaget

Parents know intuitively that children have their own ways of thinking and, consequently, their own views of the world. Most adults who spend time with young children can recount anecdotes that provide glimpses into the remarkable workings of the child's mind—the three-year-old who arrives at Grandma's after a long drive and notes with pleasure that "The moon came, too"; the four-year-old who doesn't want to go to his friend's birthday party for fear the friend will have grown bigger overnight; the five-year-old who announces excitedly, "Look how growing I'm going!" Although adults often take note of and appreciate such comments, it is easy to forget that this unique way of thinking applies to *all* aspects of the child's world, the social as well as the physical. The child who thinks the sun comes up because she is having breakfast would also likely think that rules about sharing exist because *she* wants to play with other children's toys.

Only recently have we begun to appreciate the complexity and subtlety of the child's sociomoral development. Sociomoral development is defined here as the child's growing capacity to relate emotionally, ethically, and intellectually to the world outside herself. In the past, it was assumed that this knowledge consisted merely of those rules, customs, and conventions handed down from adult to child. According to traditional views, the child simply accumulated new information about how to act in different situations. However, such approaches do not adequately take into account the active role of the child in constructing his own knowledge. The constructivist-interactionist approach emphasizes the importance of social interaction, collaboration, discussion, and consensus seeking to the child's sociomoral development. Through relationships of mutual trust and respect with adults and peers, children come to recognize their interdependence *on* others as well as their responsibilities *to* others.

From birth the child is immersed in a complex and dynamic social environment that provides just as much influence as the physical environment. Out of a variety of interactions with adults and peers within this social environment, the child constructs an understanding of the *characteristics* of individuals and their social roles, as well as an understanding of the relationships among those individuals. This is not an easy task, since individuals, unlike objects, cannot be depended upon to react the same way every time, and since relationships themselves are always changing. Compared with the physical environment, the social environment can seem to be (and sometimes is) inconsistent and unpredictable. Yet young children somehow construct rules and organize patterns that enable them to put together an understanding of social roles, friendship, justice, and equity as they interact with others.

The young child is faced with not one social world, but two: the world of adults and the world of peers. As a result of interactions within these two social worlds, she constructs two different under-

standings of relationships. The infant's first social world is made up primarily of adults. Because of the infant's total dependency, the adult-child relationship is initially unilateral, but ideally moves toward a relationship of mutual trust and respect. Unlike the adult-child relationship, the social world of peers is, from the beginning, a relationship among equals. The social give-and-take of the peer group allows ample opportunities to learn to deal with conflict, form friendships, communicate ideas and desires, and learn to negotiate and collaborate within a group. Even such an apparently simple negotiation as deciding who goes first in playing a game requires a great deal of understanding on the part of the child. The three-year-old who says, "You go first and then I'll go first" may not know what adults mean by "first," but he clearly understands a great deal about the social environment. He knows that games have rules, for example, and that individuals take turns in playing. He also knows enough about the perspectives of others to realize that a number of people might want to go first.

When children engage in a variety of social interactions with adults and with peers, they expand and refine their understanding of social roles and of the values held by their community. It is important, however, to look at sociomoral development from the child's perspective rather than the adult's. Initially, all children are egocentric. This does not mean that young children are selfish or insensitive to others; it simply means that they cannot distinguish between their own and others' feelings or thoughts. For example, a child may give his father a puppet as a birthday gift because that is what the child would want. Out of an interaction between the child's limited experiences of the world and his unique ways of thinking, the child must construct an understanding of the complexities of the social world. In so doing, the child does not simply accumulate bits of knowledge about social roles and customs, but continually structures and restructures an understanding of relationships among people and ideas.

One important means by which children gain control over their experiences is through engaging in pretend play. As they try out various roles, they expand their understanding of relationships and work out their own strong ideas and feelings. For example, when they decide to reenact a trip to the doctor's, they must first keep in mind the relationships between doctors and patients, and how each should act. In addition, the children must establish certain rules in order to run their own pretend game, such as negotiating who will play the various roles. As they enact their parts, they continually clarify for each other and for themselves particular aspects of the situation, reminding each other what individuals in particular roles are allowed to do and modifying their own rules as needed.

Children employ their own dispositions toward curiosity, initiative, confidence, and creativity in their efforts to make sense of their world. Dispositions are not skills or pieces of information. Rather, they are tendencies to respond in certain ways. Consider the child who is interested in how things work and takes a clock apart to "fix" it. If adults encourage the child's exploration of clocks and allow her opportunities to work with them, the child's curiosity, initiative, confidence, and creativity will be enhanced. Likewise, adults who brainstorm numerous questions, who delight in exploring answers, who sometimes act on hunches, and who have the confidence to admit their own limitations, promote valuable dispositions toward learning and support children as they respond in similar ways to the world. Such individuals set the stage for a host of social relationships with high potential for the exchange of information. Children thrive emotionally and intellectually in such an environment.

To the extent that young children are constantly faced with situations they have never faced before, they are constantly called upon to invent their own solutions. In the process of relating new experiences to what they already know, children construct many possible relationships. As children gain confidence in their abilities to come to their own conclusions, they move increasingly toward moral and intellectual autonomy. As children grow and change, adults can show respect for their increasing capabilities by including them in negotiations and rule-making whenever possible. For example, most adults will not permit a three-year-old to fingerpaint without adult supervision, but

they may be willing to negotiate with a more capable five-year-old to change the existing rule about painting. Few adults expect or want children to remain forever dependent. Instead, they expect children to achieve some degree of autonomy and thus stimulate their mental and moral development to that end. If adults can relinquish some degree of control, children become increasingly able to make judgments independently.

Project CONSTRUCT includes eight major goals in the area of sociomoral development. Because interpersonal relationships are essential to a child's development, it is important that children: (1) build relationships of mutual trust and respect with adults; (2) build relationships with peers; (3) consider the perspectives of others; and (4) negotiate and apply rules. In addition, because so much of the way a child relates to others is dependent on the child's general dispositions toward life and toward learning, it is important that adults encourage each child's natural capacity to (5) be curious; (6) have initiative; (7) be confident; and (8) be creative. Project CONSTRUCT provides a process-oriented curriculum and assessment framework based on the constructivist-interactionist approach. This approach emphasizes the active role of children in constructing their own knowledge as a result of interacting with people and objects. This curriculum will support children as they explore their environment and build relationships with others. At the same time, it provides teachers with practical ways of assessing the child's progress in sociomoral development within a variety of naturally occurring contexts.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Social Relationships

Goal: build relationships of mutual trust and respect with adults

Description of Goal:

A relationship of mutual trust and respect is one in which each individual has confidence in the ability, character, and truthfulness of the other, and each is willing to show consideration and appreciation. Such relationships are noncoercive, honest, affectionate, and open. In an adult-child relationship of mutual trust and respect, adult authority is minimized as much as possible, so that children can make choices based on their own interests and judgments. When adults give fewer commands and more open statements of their own feelings or needs, children are not placed on the defensive, and their self-respect is not threatened. This does not mean that the adult is not responsible for enforcing rules and applying sanctions when there is a need involved, such as the safety of the child. Young children need adult support and encouragement as they learn to make decisions and solve problems, but the adult should be careful to show respect for the child's own standards of acceptable solutions.

For example, one kindergarten class experienced a conflict caused by some children talking during journal writing time, making it difficult for others to think. At a class meeting, the children decided to allow no talking during journal writing time. Although the teacher thought this solution was too harsh, she accepted the children's decision. A few days later, it became evident to the children that this rule needed to be changed. The new rule for the class stated that whispering during journal time was all right, since that would not disturb others. In this example, the adult's faith in and consideration for the children fosters the formation of relationships in which children are free to express their ideas and feelings, while responding to the ideas and feelings of others.

Possible Indicators for Assessment:

Uses adults as resources.

Example/Elaboration: Asks for information; asks to hear a story or favorite song; asks for materials needed to carry out a project; asks adult to take dictation; asks for a drink.

Expresses own ideas or feelings without fear of punishment.

Example/Elaboration: Expresses self through pretend play, art, music, and dance, as well as through written and spoken language.

Exchanges points of view on equal footing.

Example/Elaboration: Does not feel intimidated by adults; feels free to disagree with adult or offer own ideas when discussing situations or problems.

Offers resources to adults.

Example/Elaboration: Shares objects of value or personal interest; offers information; offers to read to others.

Admits wrongdoing without fear of punishment.

Example/Elaboration: Brings damaged objects to teacher for repair.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Social Relationships

Goal: build relationships with peers

Description of Goal:

The social give-and-take of peer relationships allows ample opportunities for the child to learn to communicate ideas and desires, build trust, negotiate and collaborate. Peer interactions stimulate the development of friendships and foster relationships characterized by caring and mutual responsibility. Furthermore, in the process of attempting to solve everyday problems and resolve conflicts, children develop a critical frame of mind. As children learn to consider the views of others, they become increasingly able to tolerate differences of opinion. A school environment offers numerous opportunities for children to build peer relationships. When children share their ideas and feelings as they engage in pretend play, sing and make music together, share books, explore the physical environment, collaborate on class journals, create with paints or woodworking materials, make up rules for games, or help with snack time and clean up, they grow socially as well as intellectually.

Possible Indicators for Assessment:

Expresses interest in peers.

Example/Elaboration: Observes others; tries to enter play; initiates conversation; admires others' accomplishments, belongings, or family; asks why classmate went home.

Engages in sustained periods of play with another child.

Demonstrates consideration for peers.

Example/Elaboration: Helps a child who has fallen; puts arm around someone who is crying.

Works with peers to generate ideas.

Example/Elaboration: Makes plans to play with a peer; chooses costumes for role-playing; chooses material for an art project; designs a town out of blocks; plans to work together in particular areas or on particular projects.

Forms special friendships.

Example/Elaboration: Plays together at recess, sits next to each other at group time, etc. Has a "best friend"; writes stories about friends; writes letters to friends.

Uses peers as resources.

Example/Elaboration: Asks for help ("Dustin, show me how to make a D"; "Where's Shannon? She knows how to read").

Offers resources to peers.

Example/Elaboration: Offers to read to others; shares pencils; offers to tie another's shoes.

(continued on next page)

Resolves conflicts.

Example/Elaboration: "Lydia and I are going out in the hall to talk over a problem."

Masters own aggressive impulses.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Social Relationships

Goal: consider the perspectives of others

Description of Goal:

The ability to consider the perspectives of others requires that children first be able to distinguish their own views from those of others. Initially, children can only see the world from their own individual viewpoints. Even when they participate in a collective activity, they focus on their own behavior and thoughts; often they exchange words but do not attempt to share ideas or communicate information. As young children interact with adults and peers within the social environment, they begin to recognize that there are ideas, opinions, viewpoints, and desires that differ from their own. This recognition enables children to begin to construct an understanding of how others might feel or think about a number of situations. From this understanding comes the increased capacity for empathy and acts of compassion and kindness. The ability to consider the perspectives of others is often reflected in the child's language. When speaking, for example, the child begins to take the listener's needs into account, to provide background information when needed, and to make appropriate adjustments when the listener does not understand. Over time children become increasingly able to coordinate a variety of viewpoints. From this understanding comes the awareness and willingness to try to understand others' thoughts and ideas and to anticipate reactions from other people.

Possible Indicators for Assessment:

Expresses concern/consideration for another.

> Example/Elaboration: Asks how others feel; tries to cheer up a sad friend verbally or by doing an act of kindness; offers to help someone who is hurt.

Responds to others' ideas.

> Example/Elaboration: Confirms or rejects others' ideas during sharing time or pretend play; comments on what someone said or did; elaborates on another child's ideas.

Recognizes and accepts individual differences.

> Example/Elaboration: Slows own pace to match that of a child using a walker; brings vanilla cookies for a child who is allergic to chocolate.

Respects rights and property of others.

> Example/Elaboration: Asks to use a child's toy; takes turns speaking so that each can listen to the other person; shares adult attention with others.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Social Relationships

Goal: negotiate and apply rules

Description of Goal:

The experience of making and using rules is essential for children's moral growth because it fosters cooperation and a sense of justice based upon mutual respect for others. To very young children, rules are fixed or predetermined. Children follow rules that have been handed to them, and they remind each other of those rules. Generally, to children under four, a rule is a rule is a rule. Between the ages of four and seven, however, children construct new understandings of rules and social obligations. At this level, they are capable of understanding that rules are cooperative agreements, capable of being changed. They begin to view the process of rule-making as a means to achieve a desired goal. It is at this time that children begin to formulate rules of behavior and negotiate personal and social rules. For example, when playing with colored cubes three first graders began making individual patterns. Before taking one of Sarah's red cubes, Jared said, "Let's say you have to ask before taking someone else's cube." Matt said, "O.K., and if you ask someone for one they have to say yes." Interaction with peers and adults is essential for the child to construct understanding of rules as cooperative agreements. When children begin to take peers' viewpoints into consideration, they are increasingly able to suggest and negotiate rules with each other.

Possible Indicators for Assessment:

Remembers and follows rules.

Verbalizes rules to other children.

Example/Elaboration: Explains rules; reminds others of classroom rules; gives directions.

Plays games according to rules.

Offers explanation of rules.

Example/Elaboration: Tells why a rule was made; tells why a rule is needed.

Negotiates with others.

Changes existing rules.

Example/Elaboration: One child may play game differently—others agree to new rules.

Suggests new rules.

Example/Elaboration: Thinks of new ways to decide who goes first.

Participates in rule making with others.

Example/Elaboration: Contributes to discussion about rules; thinks of a rule that fits the situation; accepts suggestions from others; discusses and comes to mutual agreements.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Dispositions

Goal: be curious

Description of Goal:

Curiosity is defined as an active desire to know or learn, especially about something new or strange. It is the spark that touches off children's exploration of all aspects of the world around them, from objects and people to ideas and customs. Curious children may manifest their curiosity in a number of different ways. Curiosity does not always take the form of verbal questioning, although the curious child often will have questions about any new situation or object. Likewise, verbal questions are not always signs of true curiosity; sometimes the child's goal may be to experiment with language or to get attention rather than to discover answers. Young children often express their desire to know by acting on the environment, by touching or manipulating objects, even taking them apart at times in their efforts to find out more. While it is difficult to imagine a child who is not curious, it is easy to imagine a situation in which the child's curiosity is stifled. When adults discourage children from actively exploring their world or dismiss children's questions as silly or unimportant, they inhibit children's natural curiosity. On the other hand, children who are encouraged to act on their own desires to know about the world can go far toward the construction of new understandings.

Possible Indicators for Assessment:

Shows interest in people, activities, environment.

Example/Elaboration: Watches others during playtime; physically manipulates objects.

Expresses interest in new things.

Example/Elaboration: Chooses new things as they are added to center areas; asks about a new word; tastes new food; plays new game.

Actively explores on own.

Example/Elaboration: Experiments or asks questions in science area, etc., that go beyond basic goal of activity. Asks questions and/or invents problems; seeks answers to questions; develops areas of personal interest.

Notices changes in people and environment.

Example/Elaboration: Asks about changes in hairstyle, new shoes, new pictures on the wall.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Dispositions

Goal: have initiative

Description of Goal:

Initiative is both the ability to introduce a new plan or task and to implement a course of action. Children who are developing initiative act upon their own thoughts, thereby exhibiting a spirit of independence and gaining a sense of personal autonomy. Initiative can be exhibited in a variety of ways. One child may spend hours pursuing his own interests, making projects or plans, or just keeping busy. Another child may begin casual conversations with peers or adults, suggest group activities, or take the lead during music time. A third child may show initiative by making decisions independently or by offering solutions to problems. Adults support children as they develop initiative by giving them the opportunity to make meaningful choices. Children who are not allowed to express ideas, give suggestions, or direct their own play may have difficulty developing initiative.

Possible Indicators for Assessment:

Directs own behavior.

Example/Elaboration: Finds ways to make self happy; chooses own activities; reads or looks at books; sings; plays games; draws; builds with blocks; gathers own materials; completes a plan; organizes self to complete several tasks.

Begins conversations.

Offers to help and/or offers solutions to problems.

Takes lead in group games or activities.

Example/Elaboration: Organizes game and seeks out players.

Makes decisions independently.

Example/Elaboration: Chooses own writing topics; votes without waiting to see how others vote.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Dispositions

Goal: be confident

Description of Goal:

Confidence is defined as the reliance on or belief in one's powers over one's circumstances, or the faith that one will act in an appropriate manner. It is an aspect of self that fosters development of autonomy in both the intellectual and sociomoral realms. Confidence can be measured by the degree to which a child feels positive about herself and her ability to do things or to adapt to new and unusual social situations. The confident child is willing to take risks, feels free to express or defend ideas, to try new games or toys, and generally feels comfortable in new settings. By contrast, the child who lacks confidence is fearful of new situations and often seeks assistance, usually from an adult, when trying anything new. An environment that is accepting and supportive of the child's ideas and actions contributes greatly to the child's developing sense of confidence and self-worth.

Possible Indicators for Assessment:

Views self as competent.

Example/Elaboration: Shows pride in own accomplishments; attempts to solve problems on own; offers to help others; says "Look what I can do."

Takes reasonable risks.

Example/Elaboration: Attempts to read and write words even when unsure of correct spelling; attempts a new activity.

Contributes to discussions.

Example/Elaboration: Talks in large or small groups; volunteers ideas in a class discussion.

Asserts own attitudes/opinions.

Example/Elaboration: Speaks with self-assurance; expresses unpopular idea.

Defends rights of others.

Copes with frustrations/failure.

Example/Elaboration: Keeps trying even when something does not turn out as expected; can lose at a game without falling apart ("Shawn won, but I ran my fastest.").

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Sociomoral Development

Area: Dispositions

Goal: be creative

Description of Goal:

To be creative is to think of something in a new way, to invent rather than to imitate, or to combine elements into new relationships. Generally we think of creativity in terms of an unusual talent in art, music, writing, or science. However, creativity also is expressed in the way children function in their environment as they encounter new situations and problems. The ability to see gaps in knowledge, to generate original and varied responses to questions or problems, and to extend and elaborate ideas and activities all show creative forces at work. A child who is not developing creativity imitates actions or responses and rarely has anything new to offer when faced with a problem or when trying to expand on a familiar game or story. However, a creative child who has been nurtured in an environment that encourages autonomy and a sense of worth often proceeds beyond the first solution to a problem and comes up with a number of solutions, some that are feasible as well as some that are impractical or witty.

Possible Indicators for Assessment:

Generates a variety of ideas.

Example/Elaboration: Identifies inconsistencies or problems; asks questions; pursues answers; experiments with objects; observes closely; notices discrepancies; makes predictions; generates original, unusual, or complex ideas and activities.

Transfers ideas into different contexts.

Example/Elaboration: Extends and elaborates ideas and activities; sets up own experiments.

Transforms material to suit own needs.

Example/Elaboration: Makes sculptures out of paper wads and glue; uses old toy parts to make robots.

Exhibits sense of humor.

Example/Elaboration: Enjoys incongruities; plays with rhymes; makes up nonsense words.

Enjoys process of creating.

Introduction to Cognitive Development

> Education doesn't end until life ends, because you never know when you're going to understand something you hadn't understood before.
>
> —F. Conroy

Three-year-old Ashley and Jordan spent most of one morning dropping various objects into a sinkful of water to see what would happen. Peter, age four, occupied himself for a long while sorting cars and trucks into groups according to how fast he thought they would go. At snack time, Shannon, Lisa, and Christopher offered to distribute milk and cookies to their kindergarten class. Lisa served one carton of milk at a time until she had served everyone. Shannon got out a large plate and piled up a number of cookies, underestimating how many were needed. When she ran out, she went back for more, this time getting too many. She then broke the remaining cookies into pieces and handed out the pieces in order to make things come out even. Christopher first counted all the children and then counted out the same number of napkins before handing them out.

Adults can learn a great deal about the cognitive development of children by observing them as they explore their environment, imitate actions, manipulate objects, and experiment. Cognitive development is the process of connecting the yet-to-be-known with the already-known, including awareness and judgment. Actions are often the primary ways of thinking for young children. These actions, including play actions, not only reflect what the child already knows; they also further the child's cognitive development, especially in the areas of problem solving and abstract thinking. Often what looks like mere play to adults serves a vital role in the child's educational process. Children play in order to grow, and that growth in turn furthers play.

It is important to keep in mind that thinking always occurs within a physical and social context. In a constructivist-interactionist classroom, therefore, children are encouraged to express their curiosity by initiating their own active explorations and experiments. Even when the results are not what the children expect, they gain a great deal of knowledge. For example, a child who predicts that large objects will sink and small ones will float gains a great deal of knowledge through the act of searching for a large block of wood that will sink. Such explorations, along with the accompanying discussions and negotiations among peers, are vital to the child's development. Through various interactions, children learn to express their own ideas and feelings as well as to consider the perspectives of others. To the extent that explorations occur within a social environment built on trust and mutual respect, children develop both socially and cognitively.

Likewise, the child's cognitive development is directly related to the child's physical development. When children act on the environment, they simultaneously learn to refine and control their own body movements and to use objects and equipment with increasing coordination and purpose. Three-year-olds may at first be perfectly satisfied jumping for the sake of jumping or hammering for the sake of hammering; nevertheless, by engaging in these activities, they develop skills that will later enable them to construct new knowledge. This knowledge, gained as a result of interacting with people and objects, furthers cognitive development.

There are two sources of knowledge—external and internal. *External knowledge* is gained through interaction with the physical and/or social environment. The properties of objects in the physical environment are considered external to the child. An understanding of particular objects is gained by acting on them and observing their reactions. For example, when children pound and

squeeze lumps of clay, they learn about the physical properties of the modeling material; these properties are external to the children themselves. Similarly, certain information about the social environment may also be considered external to the child, in that it is gained as a result of interaction with others. To expand on the clay modeling example above, if an adult labels the shapes or the color of the clay, the source of that information is also external to the child. In other words, children may not discover for themselves what "blueness" is called, whether in English or French or Swahili, without interacting with the external social world. By contrast, *internal knowledge* is constructed by the child alone in the process of discerning relationships or making mental connections. To take the same example one step further, if the child were to roll out two balls of clay and observe that they are the same, that relationship of "sameness" would be considered internal, in that the relationship has been created in the child's mind. Another child, focusing on the color of the clay balls rather than their shape, might construct a different "sameness."

Understanding of relationships, such as similarity or difference, comes from the interactions between the child and the objects rather than from the objects alone or the child alone. One has only to listen to the conversations of young children (or adults, for that matter) as they argue the fine points of whether two things are the same to be convinced that these relationships are indeed constructed internally by the individual. When children interact with people and objects in the environment, they form certain expectations about the way things are. As they attempt to make sense of their experiences, they construct a framework of relationships and mental connections by which they organize and make judgments about new information. This framework provides a way for children to think about objects or events, such as "things to wear" and "things to eat," or to recognize a "bad word" as such and to distinguish it from "good words."

A key to cognitive development is the ability to reconcile old and new knowledge. When expectations are not met, or when new information is inconsistent with previous knowledge, children cannot simply add the new information to previous ways of thinking; rather, they must construct new, often more elaborate, understandings. For example, a child may have a conception of what a cat is. From past experiences with cats, he has concluded that all cats are furry, four-legged animals that are smaller than dogs. However, at the zoo one day he hears someone refer to the tigers and lions as cats, but this information is inconsistent with his previous conception of what cats are. In order to resolve this discrepancy, the child must somehow fit the new conflicting information into his existing knowledge. As he looks more closely at the lion and tiger, he compares them with his mental image of a cat. Both the lion and tiger are furry and have four legs and move like cats. Although they are bigger than any cats he has seen before, they are more like cats than like other animals he knows about, such as dogs or cows or squirrels. He then constructs a new, more elaborate conception of cat that includes tigers and lions as well as the neighbor's pet.

Project CONSTRUCT emphasizes four major areas of cognitive development—physical knowledge, conventional knowledge, logico-mathematical knowledge, and representation—and includes thirteen major goals. For the purposes of this curriculum and assessment, these areas are discussed separately, although in reality it is often difficult to make clear distinctions.

Physical knowledge is gained by using all the senses to study properties of objects and by observing reactions. When children squeeze lumps of clay, roll balls down an incline, mix paints to see what colors they can produce, or drop objects to see what happens, they construct physical knowledge about the properties of various objects. Likewise, a child who observes a robin building a nest may try putting out various materials, such as string, toothpicks, or brightly colored yarn, to see if the bird will incorporate one or more of them in her nest. In order to construct an understanding of the physical world, it is important that children act on objects to (1) observe reactions; and (2) produce desired effect.

Conventional knowledge, which may consist of a number of facts, rules, symbols, or customs agreed upon by society, is gained through interaction with people rather than with objects. Some

conventional knowledge, such as the child's own name and address, is transmitted directly by adults and older children within the culture. Other conventional knowledge, such as knowledge of social expectations, is constructed by the child as a result of interactions with various people. Because an understanding of conventional knowledge is necessary in order to communicate well with others in a society, Project CONSTRUCT includes three goals in this area. It is important that children (1) know personal information; (2) know about the community and social roles; and (3) know conventional notations.

Logico-mathematical knowledge is the knowledge gained from making all kinds of relationships. In an effort to make sense of their experiences, children construct a framework of relationships, or mental connections. Thus children extend and elaborate their understandings of the world by building information in one area, transferring it to another, and making connections between pieces of information which were once separated. Project CONSTRUCT includes four major goals in logico-mathematical knowledge. It is important to children's cognitive development that they learn to (1) construct classificatory relationships; (2) order things according to relative differences; (3) construct numerical relationships; and (4) construct spatial and temporal relationships.

Representation is the ability to conceptualize objects and events not immediately present. In order to distinguish relationships and to make judgments about them, the child must be able to think symbolically. These mental images enable individuals to remember past experiences and to apply what is learned in one situation to new situations. By means of a system of mental images, individuals are able to organize their experiences of the world in order to understand them further. For infants, thinking is restricted to what is immediately present—a bottle, a toy, or mother—but as children develop, they become increasingly able to form images of people, objects, and actions that are absent. Project CONSTRUCT has identified four goals under representation. It is important that children be encouraged to represent their ideas and feelings through (1) pretend play; (2) movement; (3) music; and (4) graphic arts and three-dimensional constructions. Because of the importance of language as a system of representation in our culture, language development is treated as a separate domain in Project CONSTRUCT.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Physical Knowledge

Goal: act on objects and observe reactions

Description of Goal:

In the construction of physical knowledge, both the child's action on objects and the child's observation of reactions are important. In this sense, objects refer to material things that may be perceived by the senses; for example, anything that can be handled, stacked, dropped, torn, mixed, poured, or pounded. Depending on whether the child is most concerned with the movement or with the changes, sometimes the child's action on the object is primary and the observation is secondary (e.g., activities involving pushing, pulling, rolling, dropping objects); at other times, the child's observation is primary and the action is secondary (e.g., mixing paints or baking a cake). Children who follow through on their own natural interest in exploring and observing objects construct a great deal of physical knowledge through the process. In contrast, children who sit and watch while others do the experimenting do not gain the same kind of understanding. Teachers support children as the latter build on their existing knowledge by allowing them numerous opportunities to explore a variety of objects, as well as the freedom to choose what to do with those objects.

Possible Indicators for Assessment:

Inspects objects.

Example/Elaboration: Explores objects using sight, touch, taste, sound, smell.

Produces and observes movements in objects.

Example/Elaboration: Piles small blocks on large block and slides large block to storage area—observes that it is necessary to push large block slowly.

Produces and observes changes in objects.

Example/Elaboration: Mixes paint.

Compares reactions of different objects to same actions.

Example/Elaboration: Notices balls roll more or less in a straight line but cones roll off to the side of an inclined plane.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Physical Knowledge

Goal: act on objects to produce desired effect

Description of Goal:

As children build on their understandings of the properties of objects through action and observation, they begin to act with a purpose in mind. Children not only manipulate or observe objects, but also begin to show evidence of thinking and planning prior to taking action. For example, rather than simply dropping or rolling marbles to see what happens, children may attempt to put together a marble race track, relying on what they already know about the properties of marbles and inclined planes. As children work to produce a desired effect by their actions, adults should refrain as much as possible from the urge to demonstrate "correct" methods. Children construct much physical knowledge as they figure out why something didn't work as planned. Problems, such as why the marbles roll too slowly one time or why they roll so fast they fall off the track another time, compel children to invent solutions. In their search for possible solutions, children may try and fail many times before they construct an understanding that will enable them to meet their own purposes. In the process, however, they learn much about how objects react and interrelate. Adults can discover something about what the child is thinking by asking questions such as "How did that happen?" or "Can you tell someone else how you did that?"

Possible Indicators for Assessment:

Predicts effects of own actions.

Varies actions in attempt to produce desired effects.

> Example/Elaboration: Tilts ramp to make toy car go faster; releases pendulum from various positions to hit a target; tries to make a puppet head stay up.

Explains own actions or changes in objects.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Conventional Knowledge

Goal: know personal information

Description of Goal:

Personal information, including the child's name, age, phone number, address, gender, and birthdate, is transmitted by individuals within the society. Although such information may at times be arbitrary, it enables children to communicate with others (i.e., by providing a common vocabulary as well as labels for abstract concepts). It also provides a key to new understandings. For example, young children may recite their phone numbers if asked, even when they do not have a real understanding of what those numbers represent or how those numbers correspond to each other. At some point, however, children will begin to construct personal meaning from this information and figure out, for example, that other people have phone numbers, too, that can be used to invite friends over to play.

Possible Indicators for Assessment:

Demonstrates knowledge of name.

Example/Elaboration: States name; recognizes name in print; writes own name.

Demonstrates knowledge of address.

Example/Elaboration: Knows street, city, state, country.

Demonstrates knowledge of phone number.

Demonstrates knowledge of birthdate.

Demonstrates knowledge of age.

Demonstrates knowledge of gender.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Conventional Knowledge

Goal: know about the community and social roles

Description of Goal:

An important aspect of conventional knowledge is an understanding of the social environment in which one lives, including knowledge of the various roles or functions served by individuals or institutions within the community. Children construct knowledge about the community and social roles from interactions with others within the culture and from personal observation. Knowledge of the role of police officers, for example, may be constructed by the child from a variety of sources: from personal observation, from representations of police officers in the media, and from conversations with adults or peers. As children gain new information about what police officers do and how they do it, they build upon previous understandings of that particular role. When new information is inconsistent with previous information, children may need to construct a new way of thinking about a particular aspect of the community. Similarly, children construct knowledge of the roles of various family members by interacting with individuals in these roles. Institutions and customs also serve important roles within a community. For example, a library provides information. Likewise, various customs or certain holidays may serve distinct roles within a community. Children may know the role of weekends, for example, as opposed to weekdays, because they have observed the different behavior that occurs during different parts of the week. As children explore their social environment, they continually expand and elaborate their understandings of their community.

Possible Indicators for Assessment:

Demonstrates knowledge of family or social roles.

Demonstrates knowledge of occupational roles.
Example/Elaboration: Knows what firefighters do.

Demonstrates knowledge of special days and holidays.

Demonstrates knowledge of community sites and their functions.
Example/Elaboration: Knows the library is a place to check out books; reads environmental print, including logos.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Conventional Knowledge

Goal: know conventional notations

Description of Goal:

Conventional notations are symbols agreed upon by society to represent concepts. Numerals and mathematical symbols, letters, marks of punctuation, and musical notes are all examples of conventional notations. Traffic lights, yellow lines on roads, and international signs and symbols also fall into this category. Information regarding conventional notations and their meaning can be directly taught by the teacher to the child. However, children often construct their own symbols for representing ideas. Many of these early systems have meaning only for the child who invented them. However, as children attempt to share ideas with others, the desire to communicate motivates them to construct more conventional notations. As children experiment with various ways to represent their ideas, they often begin to ask questions about conventional notations (e.g., "What do the numbers in the music book mean?" "How do you make a T?"). Based upon feedback from society, children build mental frameworks which help them to organize these conventional "facts" in systematic ways. Children beginning to construct knowledge of conventional notations may use commonly accepted symbols, but use them in ways that are not understood by the rest of society. For example, they may use two vertical lines to represent signatures when they are two years old. Later, as they learn to distinguish between numerical and alphabetical systems, they might use the first letter in their names as signatures. Eventually, they will learn the conventional way to sign their names.

Possible Indicators for Assessment:

Demonstrates knowledge of letters.

Example/Elaboration: Recites alphabet; names letters; writes letters.

Demonstrates knowledge of capitalization and punctuation.

Demonstrates knowledge of numerals/mathematical symbols.

Example/Elaboration: Recognizes numerals; names them; reads and writes numerals and mathematical symbols.

Recognizes musical notation.

Example/Elaboration: Uses singing voice when reading a songbook; chooses to write own song/music and draws staff lines with circles for notes.

Recognizes tables, charts, or maps.

Demonstrates knowledge of national and international signs and symbols.

Example/Elaboration: Recognizes traffic signs, signs for school crossing, camping, "no smoking"; makes signs for block area.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Logico-Mathematical Knowledge

Goal: construct classificatory relationships

Description of Goal:

Classification is the systematic arrangement of objects into groups or categories according to some quality or attribute, such as function, color, or shape. Although some people think of classification as a skill used primarily in mathematics, children, in fact, must put all kinds of things into all kinds of relationships in order to make sense of their experiences. They distinguish between people and things, between babies and older children, between day and night, and between red and blue crayons. Young children classify the people and things in their environment according to their own purposes, which may or may not match the purposes of others. The assumption that children and adults are using the same classification systems occasionally poses problems. For example, one five-year-old was asked to circle the picture that didn't belong. The worksheet depicted a cow, a cat, a fish, and a dog. The teacher was thinking "mammals" and "not mammals," while the child was thinking "pets" and "farm animals." As a result, the child circled the picture of the cow. For classificatory relationships to be meaningful to the child, they must be constructed by the child.

Possible Indicators for Assessment:

Constructs relationships of similarities and differences.

Example/Elaboration: Makes simple analogies; compares objects, events, people, and places using self-chosen criteria.

Makes collections of related objects.

Example/Elaboration: Sorts toy cars according to which ones go fastest.

Makes inferences.

Example/Elaboration: Notices someone is all dressed up and concludes that something special is happening. When playing "Go Fish," infers that Johnny must have at least one 5 because he asked for a 5.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Logico-Mathematical Knowledge

Goal: order things according to relative differences

Description of Goal:

The child's ability to order things according to relative differences is not restricted to arranging things in a series or making judgments about relative size. Children may also order things according to such traits as loudness, weight, or texture. Often children best demonstrate this capacity for discriminating differences in their daily interactions. For example, the ability to differentiate the relative sizes of chocolate chip cookies can make a significant difference to children who wish to ensure that they get the biggest ones. Similarly, older children often indicate their increased understandings when they generously offer to trade their own (larger) nickels for a younger child's (smaller) dimes. Children continually build on these early experiences of putting objects and people in order. Over time, children rely less on physical manipulation of objects and become increasingly capable of thinking abstractly about relative differences. This notion of ordering in the physical world thus provides a basis for ordering abstract symbols, such as numbers.

Possible Indicators for Assessment:

Orders based on perception.

Example/Elaboration: Seriates only obvious differences; makes pairs of opposites, such as big and little.

Orders using trial and error.

Example/Elaboration: Inserts a member into a series by guessing where it fits; must physically compare member to each item in the series.

Orders based on logical system.

Example/Elaboration: Inserts a member into a series without having to compare it to each of the other members of the series; applies various strategies when playing "Guess the Number" rather than calling out random numbers.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Logico-Mathematical Knowledge

Goal: construct numerical relationships

Description of Goal:

Children construct numerical relationships when they establish that there is a one-to-one correspondence between external objects and abstract numbers and when they can mentally manipulate part-whole relationships. Young children rely on perceptual information in their judgments of number. As a result, they may count the same object twice, skip objects when counting, or may believe that changing the arrangement of objects changes the quantity. Typical approaches to early number development that only emphasize rote counting and reading and writing numerals assume that because children can count to 10, they have an understanding of what "ten" means. Over time, children construct an understanding of ten as including all the preceding numbers in the series from one through ten. They also will come to know that 10 can be arranged into various combinations or sets (e.g., five and five; one and nine, etc.). The difference between a child who has constructed numerical relationships and one who has not can be seen in the following example: If an adult counts out seven chips and says to these two children, "Show me seven," the child who has constructed numerical relationships will indicate all of the chips; the child who has not constructed numerical relationships will point to the last one.

Possible Indicators for Assessment:

Makes judgments of same, more than, and less than.

Establishes one-to-one correspondence.

Example/Elaboration: Gets one straw for each carton of milk.

Makes comparisons using logical numerical relationships.

Example/Elaboration: Relies less on physical manipulation of objects to make numerical judgments; begins to use self-chosen numerical symbols; identifies place value; compares numbers; plays card games, such as "War."

Develops understanding of part/whole relationships.

Example/Elaboration: Knows that when groups are combined, the resulting combination is greater than either of the parts alone.

Solves problems using logical numerical relationships.

Example/Elaboration: Solves word problems; adds and subtracts numbers; supplies missing numbers; challenges others' numerical solutions.

Recognizes that quantities do not change even when objects are rearranged.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Logico-Mathematical Knowledge

Goal: construct spatial and temporal relationships

Description of Goal:

Young children construct a sense of space based upon their physical activity and interactions with the environment. Children construct spatial relationships when they put objects together and take them apart; when they move over, around, or through boxes and tunnels; when they locate objects at home or school; or when they attempt to give directions to the park or the library. They expand and refine their understandings when they begin to measure or to compare the distance, direction, or position of objects. However, teaching children how to use a ruler to measure will not help them to understand spatial relationships. It is preferable to encourage young children to invent their own units of measurement, perhaps laying a block in a repeated fashion against another object, or extending their hands to span the length of the room.

Likewise, children construct temporal relationships as they interact with their social and physical environment. They may learn about time as they experience familiar sequences of events (e.g., nap time, doughnut day), observe changes in their environment (e.g., thunder follows lightning), or recall recent past experiences that differ from normal routines (e.g., a trip to the zoo). Young children do not construct temporal relationships simply as a result of being taught about calendars and clocks, although they may express interest in the timepieces used by adults. Rather, children construct their own understanding of the order of events and the intervals between them as a result of a wide variety of experiences including regular routines and special events.

Young children have difficulty separating time from a spatial place. They assume it is not dinner time until they are physically at the dinner table. After a long drive in the car, they may literally point out the back window to represent a time earlier in the day.

Possible Indicators for Assessment:

Solves spatial problems.

> Example/Elaboration: Builds with blocks; locates objects in the home, school, and community; keeps out of the way of swings; drives tricycle through gate.

Measures the size and volume of objects using standard and non-standard units.

> Example/Elaboration: Places objects next to one another to compare lengths; creates personal measurement devices, such as, "How many blocks tall is John?" "How many handfuls of sand will the pie plate hold?"

Represents the distance, position, and direction of objects and places.

> Example/Elaboration: Gives visitors directions to the principal's (or school) office; makes drawings of physical knowledge activities.

Knows and follows familiar time cycles.

> Example/Elaboration: Recalls familiar, recent past events; predicts familiar future events and prepares for them, such as getting ready to go to bed.

(continued on next page)

Describes and predicts the order of events.

Example/Elaboration: Relates personal experiences in sequential order; retells familiar stories; predicts future events; observes seasonal or other cyclical changes; covers ears after seeing lightning.

Uses standard and nonstandard measurement devices to mark events in time.

Example/Elaboration: Uses sand timers; uses time instruments in games; tells time; interprets calendars.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Representation

Goal: represent ideas and feelings through pretend play

Description of Goal:

Pretend play is one form of representation by which children gain understanding of and control over their feelings and experiences. Teachers can facilitate the development of children's imagination and use of symbols (as well as their sociomoral and language development) by providing the conditions that encourage pretend play: friends to play with, props, and a time and place to play. When children play games of make-believe, they strengthen their abilities to conceptualize nonpresent situations. Through pretend play children can create situations as realistic or fantastic as they wish. In addition, they can work out emotional distresses or relieve monotony or boredom. Pretend play is not simply structuring a classroom drama to be acted out by children, although children may gain some benefits from these activities as well. The difference is that in pretend play, children control their own ideas and feelings because they run their own games. It is one way children construct new information, which strengthens their ability to think abstractly, to deal with hypothetical situations, and to work through various problems.

Possible Indicators for Assessment:

Assumes role.

Example/Elaboration: Takes role of family member or individual in community; takes role of storybook character.

Develops play themes.

Example/Elaboration: Uses props or costumes to extend play; uses different voices or sounds to enhance play; uses facial expressions to enhance play.

Takes part in interactive play.

Example/Elaboration: Negotiates who will play particular roles.

Uses language to elaborate on make-believe situations.

Example/Elaboration: Talks about story while pretending—"Let's say we build a house and let's say the kitchen will be here."

Expresses preferences for particular play themes.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Representation

Goal: represent ideas and feelings through movement

Description of Goal:

Movement is an important way for children to form impressions of and construct ideas and feelings of the world around them. From an early age, they discover how to use movement to satisfy a goal (e.g., grasping a toy) or to convey meaning (e.g., waving good-bye). Sometimes, however, the pleasure is merely in the movement or the repetition of the movement itself, as in dance. As children explore movement, they often act in unconventional ways, at least by adult standards. They zigzag across the yard, they walk backwards up stairs, or they climb over walls rather than go around. While movement is one way for children to construct their idea of the world through physical action, they can also use movement to express or work through their moods or emotions. Movement is not just physical education exercises. What to move, how to move, and where to move all become important questions for the developing child. Children learn to jump by jumping and then proceed to vary their actions by jumping on one foot or jumping down stairs. Later they may incorporate this new skill into their play: they may jump to represent their ideas of frogs or kangaroos, for instance.

Possible Indicators for Assessment:

Reproduces and refines patterns of movement.
Example/Elaboration: Taps foot, marches, dances, skips.

Responds to changes in speed or direction.
Example/Elaboration: Hops faster when music speeds up; exercises to different tempos.

Creates and extends patterns of movement.
Example/Elaboration: Dances with streamers; skates using paper plates.

Communicates through gestures or pantomimes.
Example/Elaboration: Plays charades; hops like a frog.

Expresses preference for certain movement.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Representation

Goal: represent ideas and feelings through music

Description of Goal:

From the beginning, children are surrounded by a variety of sounds and rhythmic patterns. They notice the voices of their parents as they hum; they hear birds singing in the morning; they respond to the rhythms of nursery rhymes and the melodies of folk songs; they hear music on the radio or TV. They, in turn, make their own music: they may sing, try to whistle, bang on pots and pans, or play records or tapes. Children construct a range of musical understandings as they listen and sing, and as they act on music-making materials in their environment. As they experience varied opportunities for exploring and listening to music, they expand and refine their understandings of such elements as melody, pitch, or tempo. If they see others reading music, they may also begin to notice aspects of the written notation system. One three-year-old regularly sings "Jack and Jill" when his mother plays it on the piano. However, he insists that she read rather than sing the same nursery rhyme when she is holding his Mother Goose book. Although he can neither read the notes nor the words at this stage, he already knows that printed words look different on the page than printed music and serve different functions. As children make music about a variety of experiences, they learn to use sound and rhythm to communicate emotions, to work through strong feelings, to symbolize important events (e.g., birthdays), and to create music together (e.g., rhythm bands or rounds). The ability to construct musical and rhythmic patterns furthers cognitive development.

Possible Indicators for Assessment:

Sings or makes music spontaneously.

Example/Elaboration: Sings while drawing a picture or cleaning up.

Assigns meaning to sound and/or rhythm.

Example/Elaboration: Associates sound of flute with bird song, sound of drums with galloping horse or rain, sound of siren with fire drill.

Associates music with context in which it is usually heard.

Example/Elaboration: Lullaby means bedtime; "Frosty the Snowman" means winter; "Star Spangled Banner" means baseball.

Modifies, extends, and elaborates songs or musical patterns.

Example/Elaboration: Takes a familiar song and changes or adds to the words or tune; "Lazy Mary Will You Get Up": changes Mary to own name.

Creates new songs.

Expresses preferences for certain sounds or rhythms.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Cognitive Development

Area: Representation

Goal: represent ideas and feelings through graphic arts and three-dimensional constructions

Description of Goal:

By engaging in such activities as painting, drawing, woodworking, modeling with clay, and building with blocks, children use a variety of visual symbols to express their reality. Whether they are creating by means of free-form materials (e.g., clay, sand, chalk, markers) or assembling ready-made parts into new arrangements (e.g., mosaics, blocks, collage, tangrams), it is the process of finding solutions, making judgments, and exercising preferences that is important, not necessarily the product. The challenge is to satisfy the self. One child drew three trees the same shape, but painted the lemon tree yellow, the chocolate tree brown, and the apple tree red. For the child, aesthetic and utilitarian concerns are often combined. For example, children's primary purpose in building with blocks may be to represent a bridge; however, as they build, they also may indicate an awareness of a number of aesthetic principles, such as symmetry. Art materials and activities allow various possibilities for cognitive development and pose different problems for children to solve as they invent ways to translate their ideas and feelings into visual symbols.

Possible Indicators for Assessment:

Assigns meaning to own drawings or models.
- Example/Elaboration: Tells about drawing after it is completed.

Combines shapes, textures, or colors into meaningful arrangements.
- Example/Elaboration: Draws, paints; makes collages, clay models, or paper-mache; builds with blocks; makes maps or charts; makes scale models.

Expands and elaborates drawings or models.
- Example/Elaboration: Adds details, backgrounds.

Interprets the drawings or models of others.
- Example/Elaboration: Tells what she likes about others' work.

Expresses preference for particular colors or textures.

Project CONSTRUCT

Validation Survey Edition

Introduction to Language Development

> Communication . . . is conceived as a social interactive process in which speakers and writers attempt to link into what listeners and readers know, want to know, or need to know. The process requires collaboration between participants as they negotiate meaning, share insights and bits of knowledge, and seek common understandings.
>
> —G. Pinnell and M. King

At age three, Matthew kept a journal filled with random letters and letter-like forms that he often asked his parents to read back to him. Craig, at four, regularly "read" his favorite books to his dolls and stuffed animals, pointing out pictures and reciting text from memory. When Rachel was five, she entertained others with renditions of familiar fairy tales as well as her own made-up stories. These children and others like them have found ways to use language in their own ways, for their own purposes.

Current research has shown that children are not passive receptors of language any more than they are passive receptors of other kinds of knowledge. According to the constructivist-interactionist view, children construct their own knowledge of how language works by purposefully interacting with people and objects in their environment. Just as children learn to speak and listen by speaking and listening, children who are intellectually active within a responsive social environment best learn to read and write by reading and writing.

Constructivist-interactionist approaches to language development recognize that children always learn language within a physical and social context. Indeed, language permeates every facet of existence. Through spoken and written language, individuals attempt to express feelings and ideas, make friends, influence others, negotiate rules, entertain, display knowledge, or explore and clarify ideas. From birth, children are surrounded by a wide variety of meaningful expressions, including all the sounds, words, signs, symbols, and gestures that make up language. They observe speakers as they greet one another, ask questions, share experiences, and engage in conversations. They notice readers responding to signs and directions, consulting recipes, poring over newspapers, or relaxing with novels. They watch writers jot down lists, make notes and journal entries, or write letters, essays, or stories. Children expand their understanding of the forms and purposes of language by building on what they already know about the characteristics of the individual speakers, readers, or writers, their various purposes, and the context of the situation.

Language is a system of representation that enables individuals to conceptualize objects and events not immediately present and to communicate ideas and feelings to others. In this way, language is similar to other systems of representation, such as pretend play, art, music, movement, and dance. Representation enables individuals to remember the past, make connections, and apply what is learned in one situation to new situations. Individuals also use these representations to think hypothetically about imaginary and real-life situations and to plan for the future. However, language differs from other systems of representation in that it is a social invention. This is not to say that children do not "bend" language to suit their own needs (e.g., create nonsense words to describe a toy). However, the need to communicate makes it necessary that children learn the language commonly understood within their community. As children expand and refine their understanding, they build on what they already know, both about the forms of language and about how language functions within the social and physical environment.

Children operate under the assumption that language is orderly, and they try out various alternatives as they attempt to discover that order. In the process of teaching themselves how spoken language works, children construct their own rules, based on their understandings of adult speech. Thus, a three-year-old may say "foots" instead of "feet" and "goed" instead of "went." Similarly, children beginning to explore written language may write various curved and linear shapes rather than conventional letterforms, or they may conscientiously place dots between each word. These approximations indicate that children do not merely imitate adult language but actually construct their own conceptual framework for ordering a complex system.

Most adults recognize and encourage the beginnings of spoken language development. They value any attempt on the part of the infant to communicate, responding with pleasure to even vague approximations, like "ba" for "bottle" or "da" for "daddy." Adults trust that children will become proficient language users and thus provide them with plenty of opportunities to practice in the presence of an interested listener. Unfortunately, the beginnings of literacy have not traditionally been valued in the same way. Scribble writing and pretend reading have often been overlooked or thought to be unrelated to conventional writing and reading behaviors. It is important that adults begin to value and support these early literacy behaviors, just as they have always valued early approximations of spoken language.

As a result of increased understanding of how young children learn, educators are changing the way they look at language development and are challenging traditional methods of teaching reading and writing. Literacy is no longer viewed simply as a matter of being taught at school to read and later to write. Traditionally, the goal of early childhood education was to get children "ready" to read by teaching them isolated skills, such as the names of letters and letter sounds. This approach overlooks the fact that children in a literate society start learning about written language long before they enter school. Reading begins at that moment when children figure out that the visible marks of print are meaningful, and that there is a purpose for them, just as speaking begins the moment there are meaningful expressions.

As children attempt to communicate with others, whether through spoken or written language, they clarify their own ideas and seek ways to communicate. Thus, language becomes both a tool for thinking and a means of furthering sociomoral development. Children often exhibit their highest levels of linguistic competence in play. In many play activities, especially pretend play, children rely on language as the primary tool by which they influence their environment. They begin to substitute verbal descriptions for real objects (e.g., "let's pretend this is a table"). They learn to summarize sequences of events (e.g., "let's say we drove to the store and now we're back"). In the process, they strengthen their abilities to deal with hypothetical situations and to ask and answer the kinds of questions often raised in problem solving (e.g., "What would happen if . . . ?). At the same time, they improve their ability to negotiate and make rules with others as they work together to develop pretend scenes. As they increase their understanding of the perspectives of others, they become capable of maintaining their respective roles for increasingly longer periods of time.

A key in language development is expansion. Adults support children in their explorations of spoken language by providing opportunities for children to expand both the forms and the purposes of language they can use, as in greeting others, sharing interesting experiences and observations, and asking questions. While talking and listening to others, children clarify their own conceptions. Similarly, adults can support children in their explorations of written language by providing numerous opportunities to read and write for a variety of purposes without being held to adult standards.

As children gain confidence in their ability to use language to meet their own needs, they simultaneously expand and refine their understanding both of the purposes and the forms of language. When children are free to initiate their own explorations of language in a supportive and responsive social environment, they often ask questions, such as the names of specific words or how to form particular letters. Children who are encouraged to take risks and who receive answers to their

questions demonstrate "wonderful productivity" as they teach themselves to read and write. By contrast, children who are expected to sit quietly by themselves at desks and complete developmentally inappropriate worksheets may find reading and writing abstract and difficult, because they are disconnected from their own purposes and contexts.

Project CONSTRUCT includes seven major goals in the domain of language development. Because written and spoken language is central to our culture, it is important that the child learn to (1) use language for a variety of purposes; (2) perceive self as listener/speaker/reader/writer; (3) understand correspondence between spoken and written language; (4) use a variety of cues to construct meaning; (5) respond to literature in a variety of ways; (6) develop a sense of story; and (7) understand conventions of print. Project CONSTRUCT provides teachers with practical ways of assessing the child's progress in language development within a variety of naturally-occurring contexts.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Language Development

Goal: use language for a variety of purposes

Description of Goal:

Language is one means by which children shape, organize, and share thoughts and feelings. As children interact with adults and other children and encounter various situations or ideas, they build their understanding of what they can do with words. They learn that language can be used to satisfy personal needs, to display knowledge, to influence others, to make friends, to entertain, and to test their own understandings. When children attempt to communicate their wants and needs and to describe their world, they expand their base of language and their ways of thinking about the world. It is important that children have time to engage in informal, natural conversations and to initiate conversations. They also benefit from being part of a literate environment in which they have plenty of time to read and write in their own ways and ready access to reading and writing materials.

Possible Indicators for Assessment:

Satisfies personal needs.

Example/Elaboration: Describes needs and wants; expresses preferences and opinions; expresses feelings; signs up for a turn; writes reminders.

Influences others.

Example/Elaboration: Recognizes and produces persuasive writing; argues own point of view; gives and follows directions.

Establishes and builds social relationships.

Example/Elaboration: Recognizes and produces social notes or greeting cards; takes turns in conversation; expresses encouragement.

Entertains self or others.

Example/Elaboration: Recognizes and produces expressive writing, poems, stories; tells stories.

Gains and gives information.

Example/Elaboration: Writes in journal; asks and answers questions; explains ideas.

Displays knowledge.

Example/Elaboration: Writes class newspaper articles; answers questions; explains ideas.

Explores own understanding.

Example/Elaboration: Explores ideas through journal-writing; asks questions; wonders.

Project CONSTRUCT

Validation Survey Edition

Curriculum and Assessment Specification

Domain: Language Development

Goal: perceive self as listener/speaker/reader/writer

Description of Goal:

Children learn language through using it. When children attempt to communicate, whether through the spoken or written word, it is important that adults listen, and respond as much as possible to meaning rather than form, taking their cues from the children's interests, concerns, and learning styles. Because adults value children's early attempts at speech, children come to view themselves as speakers and listeners. In the same way that children learn to speak and listen by speaking and listening, they learn to read and write by reading and writing. At first young children may "read" by reciting a familiar story or by making up a story to go with the pictures in a book; they may "write" by scribbling wavy lines across a page. While these are only approximations of conventional reading and writing, they provide clues to the child's level of understanding about written language. When children are part of a literate environment where they have many print experiences available, where they hear and talk about stories, and where their initial attempts at reading and writing are encouraged, they come to view themselves as readers and writers as well as speakers and listeners.

Possible Indicators for Assessment:

Describes objects, events, persons, places.

Presents and listens to nursery rhymes, stories, personal experiences, or imaginary adventures.

Takes turns in conversation.
Example/Elaboration: Responds to what others say.

Relays messages.

Demonstrates expanded vocabulary in classroom conversations and discussions.

Creates personally meaningful writing.
Example/Elaboration: Chooses own writing topics; writes or pretends to write notes, lists, stories, journals, and letters; makes books.

Reads environmental print.
Example/Elaboration: Walks through the hall, reading everything (signs, student work, bulletin boards) in sight.

Reads or looks at books on own initiative.
Example/Elaboration: Pretends to read or reads to others (including dolls and stuffed animals).

Offers to read to others.
Example/Elaboration: Invites others to listen to personal writing.

(continued on next page)

Talks about being able to read and/or write.

Talks about own reading strategies.

Example/Elaboration: "I didn't know the word so I skipped it." "I used a word that made sense." Shares strategies when reading with a peer: "That's someone's name, just make up a name." "I skipped that word. I don't think it's important." "Try to sound it out." "I just think about it." "I found a word that rhymes."

Relies on self to solve literacy problems.

Example/Elaboration: Knows whom to ask for help; knows where to find words that he wants to spell from charts, picture dictionaries, or books. Uses invented spelling or leaves space for a word and continues writing; skips unknown word as first strategy and reads on, then goes back to fill in blank. Uses glossary, pictures to find words; uses reference sources to obtain information.

Project CONSTRUCT

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Curriculum and Assessment Specification

Domain: Language Development

Goal: understand correspondence between spoken and written language

Description of Goal:

The young child's understanding of the correspondence between spoken and written language differs in significant ways from the adult's understanding. At first, children understand this correspondence only in a general way. For example, they may not know that the print is what tells the story, even though they might know that print consists of "letters" or "words." Each time they hear stories, however, they expand their understandings of the sense-making aspects of stories, the stability of print to tell the same story each time it is read, and the form and structure of written language itself. They know that written language sounds different from spoken language, and they begin to differentiate between "telling" a story from the pictures and "reading" a story from the text, although they still do not see print as spoken words written down. This is understandable, since the breaks in the oral utterance do not directly correspond to the breaks in the printed sentence. Initially, children only expect people and objects to be represented in the text. For example, young children would expect to find a one-to-one correspondence between the number of words on a page and the number of objects in the picture. An important step occurs when children realize that relationships and actions are also represented through written language and that if a message can be spoken, it can also be written down. As they continue to explore books on their own or with others, they test their new understandings of the correspondence between written and spoken language.

Possible Indicators for Assessment:

Imitates book language and reading voices.

Example/Elaboration: Reads familiar book out loud as he has heard it read before; changes voice to fit characters.

Distinguishes between print and illustrations.

Example/Elaboration: Knows print tells the story.

Writes strings of letters and asks what they say.

Dictates words, sentences, paragraphs, and stories for recopying and sharing with others.

Uses illustrations and text to support each other.

Example/Elaboration: Draws and labels pictures.

Project CONSTRUCT

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Curriculum and Assessment Specification

Domain: Language Development

Goal: use a variety of cues to construct meaning

Description of Goal:

As children expand their understanding of spoken and written language, they rely on a variety of cues to construct meaning. In constructing meaning from spoken language, they rely on the social and physical context of the situation, as well as gestures, body language, vocal inflections, and facial expressions of the speakers. Similarly, in constructing meaning from written language, children rely on pictures, context, previous knowledge about the subject, similar stories, and what they already know about the sound and structure of language. They continually monitor what they are reading, self-correcting as needed in order to derive meaning from the text. As children construct meaning from spoken and written language, each language encounter becomes a base for subsequent use, with oral and written language providing input for each other.

Possible Indicators for Assessment:

Uses gestures, volume, tone of voice, and inflections to construct meaning from oral language.

Uses pictures to predict meaning.

Uses context to construct meaning from written language.
Example/Elaboration: Reads environmental print, signs, logos.

Supplies words and phrases in predictable text.
Example/Elaboration: Predicts rhyming words in Dr. Seuss' books.

Uses words that sound right.

Uses words that makes sense.
Example/Elaboration: Supplies synonyms.

Notes similarities between words.
Example/Elaboration: Uses structural analysis of word endings, etc., to determine meaning.

Project CONSTRUCT

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Curriculum and Assessment Specification

Domain: Language Development

Goal: respond to literature in a variety of ways

Description of Goal:

When children respond to stories, poems, plays, song lyrics, and the like, they are making personal connections to the text. The response may be as simple as a request to read a particular story, or the response may take the form of writing, drawing, talking, painting, singing, or engaging in pretend play about a favorite story. The child's responses to literature should not be limited to answering teacher-directed questions, such as "Who is the main character in this story?" or to performing in response to teacher requests to draw a specific scene from a story. Children's responses may take many forms. For example, one little boy returned to school after a bout with the flu and told the teacher that he, like Peter Rabbit, had eaten too many vegetables and gotten sick. When children share their ideas and feelings about literature, they explore, elaborate, and clarify personal meaning. These various avenues give children the opportunity to extend the boundaries of their experiences.

Possible Indicators for Assessment:

Asks to hear stories.

Asks questions about stories.

Relates stories to previous readings, personal experiences, or feelings.

Talks about story elements, such as themes, characters, plot.

Shares reading experiences by dramatizing, role playing, puppetry, or reporting.

Extends stories through music, movement, graphic arts, writing, or pretend play.

Draws conclusions and makes generalizations from information read.

Recalls such information as characters or sequences of events.

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Curriculum and Assessment Specification

Domain: Language Development

Goal: develop a sense of story

Description of Goal:

Stories can provide the child with a sense of history, an appreciation of the values society holds, and a view of the creativity and imagination of the community. As children engage in repeated experiences with stories, including those recorded in books and those passed down orally from one person to another, they learn what to expect from stories; what sorts of beginnings, middles, and ends they have; and the types of characters, settings and events that exist in a story. The sense of story is also developed through responding to stories and talking about characters and events. As children begin to relate themselves to the story elements and to share ideas with others, they expand and refine their understandings. This developing set of expectations guides them both in reacting to new stories and in their own story writing. They may create or recite stories for others, recount family or community legends, pretend to read familiar books, or invent their own meaningful stories to describe actions represented by pictures.

Possible Indicators for Assessment:

Recognizes variations in the re-telling of stories.
Example/Elaboration: Corrects readers when they skip pages or change words.

Distinguishes fact from fantasy.

Predicts the outcomes of stories.

Retells familiar stories.
Example/Elaboration: States main idea of story.

Tells stories with traditional beginnings, middles, and ends.
Example/Elaboration: "Once upon a time . . ." and "And they lived happily ever after."

Creates stories based on personal experiences.

Creates stories based on literary themes, characters, or plots.

Creates stories based on oral traditions.
Example/Elaboration: Recounts family lore; modifies folk tales, legends, or fairy tales.

Project CONSTRUCT

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Curriculum and Assessment Specification

Domain: Language Development

Goal: understand conventions of print

Description of Goal:

When children see adults and older children read and write, they gain valuable information about the sound and structure of written language, how it is used, the form of language used in specific contexts, and the symbols used to make written language. They also learn how to handle books. The conventions of print are culturally transmitted. For instance, in Western culture, books are read from left to right, top to bottom, whereas some other cultures read from right to left, bottom to top. But memorizing these conventions does not mean that the child understands the printed word. Even when young writers' first marks and scribbles only approximate conventional print, they indicate that children understand certain aspects of written language. Children may write pseudoletters of various curved and linear shapes and experiment with spaces between words. Over time, they discover that our writing system is based on letters representing speech sounds, and their letter-like forms and invented words gradually become more standard. Once children have figured out that our writing system is alphabetic and know at least a few letters (most often those in their own names), they begin to invent their own systematic spellings. Adults support children by accepting these invented spellings. Children's need to communicate motivates them to move increasingly towards conventional usage.

Possible Indicators for Assessment:

Writes random letters.

Exhibits book handling skills.

Example/Elaboration: Holds books right side up; turns pages in sequence.

Develops personal reading vocabulary.

Example/Elaboration: Recognizes own name and other personally significant names and/or words.

Develops personal writing vocabulary.

Example/Elaboration: Uses inventive spelling.

Asks questions about written language.

Example/Elaboration: Asks what a word or sign means; asks how to spell particular words; asks what a dash or question mark is; asks what a letter is called; asks why a capital letter is used; asks what quotation marks are for; asks why a word is underlined.

Composes with increasing intelligibility and legibility.

Example/Elaboration: Combines sentences with simple conjunctions; approximates correct usage of capital letters and punctuation; approximates conventional usage of plurals, verb tenses, etc.

Bibliography

Adcock, D. & Segal, M. (1983). Making friends: Ways of encouraging social development in young children. Englewood Cliffs, N.J.: Prentice Hall.

Applebee, A. N. (1980). Children's narratives: New directions. The Reading Teacher, 34, 137-142.

Blank, M., Rose, S., & Berlin, L. (1978). The language of learning: The preschool years. New York: Grune and Stratton.

Bringuier, J. C. (1980). Conversations with Jean Piaget. Chicago: University of Chicago Press.

Bredekamp, S. & Shepard, L. (1989). How best to protect children from inappropriate school expectations, practices, and policies. Young Children, 44, (3), 14-24. Washington, D.C.: NAEYC.

Brodzinsky, D. M., Golinkoff, R. M., & Sigel, I. E. (1981). New directions in Piagetian theory and research: An integrative perspective. In Brodzinsky, D. M., Golinkoff, R. M., & Sigel, I. E. (Eds.). New directions in Piagetian theory and practice. Hillsdale, NJ: Lawrence Erlbaum Associates.

Bryen, D.N. (1982). Inquiries into child language. Boston: Allyn and Bacon.

Canfield, J. & Wells, H. C. (1976). 100 ways to enhance self-concept in the classroom: A handbook for teachers and parents. Englewood Cliffs, N. J.: Prentice-Hall.

Charlesworth, W. R. (1964). Development and assessment of cognitive structures. In Ripple, R. & Rockcastle, V. (Eds.). Piaget rediscovered: A report of the conference on cognitive studies and curriculum development. New York: Cornell University.

Clay, M. (1975). What did I write? Auckland, New Zealand: Heinemann.

Clay, M. (1979). Reading: The patterning of complex behavior (2nd ed.). Auckland, New Zealand: Heinemann.

Cohen, E. & Gainer, R. (1984). Art: Another language for learning. New York: Schocken Books.

Conroy, F. (1988). Think about it: Ways we know, and don't. Harper's, 177, (1662), 68-70.

Copeland, R. W. (1974). How children learn mathematics: Teaching implications of Piaget's research. New York: Macmillan Publishers.

Copple, C. E., Sigel, I. E., & Saunders, R. (1984). Educating the young thinker: Classroom strategies for cognitive growth. Hillsdale, N. J.: Lawrence Erlbaum Associates.

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Cowan, P. A. (1978). Piaget: With feeling. New York: Holt Rinehart and Winston.

Damon, W. (1977). The social world of the child. San Francisco: Jossey-Bass.

DeVries, R. (1987). What will happen if. . . ? Using a Piagetian approach to inspire reasoning. Scholastic Pre-K Today, March 1987, 20-23.

DeVries, R. with Kohlberg, L. (1987). Programs of early education: The constructivist view. New York: Longman.

Duckworth, E. (1964). Piaget rediscovered. In Ripple, R. & Rockcastle, V. (Eds.). Piaget Rediscovered. Ithaca, N.Y.: Cornell University

Duckworth, E. (1987). The having of wonderful ideas and other essays on teaching and learning. New York: Columbia University Teacher's College Press.

Durkin, D. (1966). Children who read early: Two longitudinal studies. New York: Columbia University Teachers College Press.

Dyson, A. H. (1981). A case study examination of the role of oral language in writing processes of kindergarteners. Unpublished doctoral dissertation, The University of Texas at Austin.

Ervin, S. & Miller, W. (1963). Language Development. Child Psychology. National Society for the Study of Education Yearbook 62, Part 1, pp. 108-143.

Ferreiro, E. & Teberosky, A. (1982). Literacy before schooling. Portsmouth: Heinemann.

Ferreiro, E. (1978). What is written in a written sentence? A developmental answer. Journal of Education, 160(4), 25-39.

Ferreiro, E. (1980). The relationship between oral and written language: The children's viewpoints. Paper presented at the International Reading Association Preconvention, St. Louis, May.

Forman, G. E. & Kuschner, D. S. (1983). The child's construction of knowledge: Piaget for teaching children. Washington, D.C.: Association for the Education of Young Children.

Furth, H. G. (1978). Children's societal understanding and the process of equilibration. In Damon, W. (Ed.). New directions for child development (pp. 101-122). Worcester, MA: Jossey-Bass.

Furth, H. G. (1980). World of grown-ups: Children's conceptions of society. New York: Elsevier.

Gardner, H. (1973). The arts and human development: A psychological study of the artistic process. New York: John Wiley and Sons.

Genishi, C. & Dyson, A. H. (1984). Language assessment in the early years. Norwood, NJ: Ablex.

Gerhardt, L. (1973). Moving and knowing: The young child orients himself in space. Englewood Cliffs: Prentice-Hall.

Goodman, K., Smith, E., Meredith, R., & Goodman, Y. (1987). Language and thinking in school: A whole-language curriculum (3rd ed.). New York: Richard C. Owen.

Halliday, M. (1979). Learning how to mean: Explorations in the development of language. London: Edward Arnold.

Hart, B. (1982). Language skills in young children, and the management of common problems. In Ellen (Ed.). Early childhood education: Special problems, special solutions. Rockville: Aspen.

Hildebrand, V. (1986). Introduction to Early Childhood Education (4th ed.). New York: Macmillan.

Hirsch, E. (1984). The block book. Washington: NAEYC.

Holdaway, D. (1979). The foundations of literacy. Sydney, Australia: Ashton Scholastic.

Hunt, J. M. (1961). Intelligence and experience. New York: The Ronald Press.

Isaacs, N. (1974). Children's ways of knowing. In Hardeman, M. (Ed.). Nathan Isaacs on education, psychology, and Piaget. New York: Columbia University Teacher's College Press.

Kamii, C. K. (1981). Application of Piaget's theory to education: The preoperational level. In Brodzinsky, D. M., Golinkoff, R. M., & Sigel, I. E. (Eds.). New directions in Piagetian theory and practice. Hillsdale, NJ: Lawrence Erlbaum Associates.

Kamii, C. K. (1981). Autonomy as the aim of education: Implications of Piaget's theory. Winston-Salem, NC: North Carolina Association for the Education of Young Children.

Kamii, C. K. (1984). The development and use of ability to seriate: Another example of the child's construction of logico-mathematical knowledge. Unpublished manuscript. Birmingham, AL: University of Alabama at Birmingham.

Kamii, C. K. (1985). Young children reinvent arithmetic—Implications of Piaget's theory. New York: Columbia University Teacher's College Press.

Kamii, C. K. (1986). The development and use of ability to classify: An example of the child's construction of logico-mathematical knowledge. Unpublished manuscript. Birmingham, AL: University of Alabama at Birmingham.

Kamii, C. K. (In Press). The mental image: A question that remains open.

Kamii, C. K. & DeVries, R. (1978). Physical knowledge in preschool education: Implications of Piaget's theory. Englewood Cliffs, N. J.: Prentice-Hall.

Kamii C. K. & DeVries, R. (1980). Group games in early education: Implication of Piaget's theory. Washington, D.C.: The National Association for the Education of Young Children.

Katz, L. (1977). Talks with teachers. Washington, D.C.: The National Association for the Education of Young Children.

Kurtines, W. M. & Gewirtz, J. L. (1987). Moral development through social interaction. New York: John Wiley & Sons.

Labinowicz, E. (1980). The Piaget primer: Thinking, learning, teaching. Menlo Park, CA: Addison-Wesley.

Larner, M. B., Schweinhart, L. J., & Weikart, D. P. (1986). Consequences of three preschool curriculum models through age 15. Early Childhood Research Quarterly, 1, 15-45.

Lindfors, J. (1980). Children's language and learning. Englewood Cliffs: Prentice-Hall.

McCarthy J. & Goodrich, E. (1980). The self-concept from a phenomenological perspective. In Yawkey, T. D. (Ed.). The self-concept of the young child. Provo, Utah: Brigham Young University Press.

Muma, John R. (1978). Language handbook: Concepts, assessment, intervention. Englewood Cliffs: Prentice-Hall.

The National Association for the Education of Young Children. (1987). NAEYC position statement on standardized testing of young children 3 through 8 years of age. Washington, D.C.: Author.

The National Association for the Education of Young Children. (1987). Good teaching practices for 4- and 5-year-olds. Washington, D.C.: Author.

The National Association for the Education of Young Children. (1988). Integrated components of appropriate and inappropriate practice in the primary grades. Washington, D.C.: Author.

The National Association for the Education of Young Children. (1988). Testing of young children: Concerns and cautions. Washington, D.C.: Author.

The National Association of Early Childhood Specialists in State Departments of Education. (1987). Unacceptable trends in kindergarten entry and placement. Author.

Petty, W. & Starkey, R. (1967). Oral language and personal and social development. In W. Petty (Ed.). Research in oral language. Champaign, IL: National Council of Teachers of English.

Piaget, J. (1948/1973). To understand is to invent. New York: Grossman. (First published in Prospects, UNESCO Quarterly Review of Education).

Piaget, J. (1953). Origins of intelligence in children. New York: International Universities Press.

Piaget, J. (1960). The psychology of intelligence. Paterson, NJ: Littlefield, Adams.

Piaget, J. (1962). Play, dreams, and imitation in childhood. New York: W.W. Norton.

Piaget, J. (1967). The child's conception of space. New York: The Norton Library. (First published in France in 1948).

Piaget, J. (1973). To understand is to invent: The future of education. New York: Grossman.

Piaget, J. & Inhelder, B. (1966). La psychologie de l'enfant. Paris: Presses Universitaires de France.

Piaget, J. (1981). Intelligence and affectivity: Their relationship during child development. Palo Alto, CA: Annual Reviews.

Pinnell, G. (1985). Ways to look at the functions of children's language. In Jagger, A. and Smith-Burke, M. (Eds.). Observing the language learner. IRA.

Pinnell, G. & King, M. (1984). This issue: Access to meaning/spoken and written language. Theory Into Practice, 23 (3), 166.

Read, C. (1971). Preschool children's knowledge of English orthography. Harvard Educational Review, 5, 5-15.

Read, C. (1975). Children's categorization of speech sounds in English. Urbana, IL: National Council of Teachers of English.

Rhodes, L. (1981). I can read: Predictable books as resources for reading and writing instruction. The Reading Teacher, 34 (5), 511-518.

Rogers, C. & Sawyers, J. (1988). Play in the lives of children. Washington: NAEYC.

Saunders, R. & Bingham-Newman, A. N. (1984). Piagetian perspective for preschools: A thinking book for teachers. Englewood Cliffs, N. J.: Prentice-Hall.

Schwebel, M. & Raph, J. (1973). Piaget in the classroom. New York: Basic Books.

Schweinhart, L. J., Berrueta-Clement, J. R., Barnett, W. S., Epstein, A. S., & Weikart, D. P. (1985). The promise of early childhood education. Phi Delta Kappan, April 1985, 548-533.

Seefeldt, C. (Ed.). (1987). The early childhood curriculum: A review of current research. New York: Columbia University Teachers College.

Selman, R. L. (1980). The growth of interpersonal understanding: Developmental and clinical analyses. Boston: Academic Press.

Sigel, I. E. & Cocking, R. R. (1977). Cognitive development from childhood to adolescence: A constructivist perspective. New York: Holt Rinehart and Winston.

Singer, J. (1973). The child's world of make-believe: Experimental studies of imaginative play. New York: Academic Press.

Smith, F. (1978). Understanding reading (2nd ed). New York: Holt, Rinehart, and Winston.

Swayze, M. C. (1980). Self-concept development in young children. In Thomas D. Yawkey (Ed.). The self-concept of the young child. Provo, Utah: Brigham Young University Press

Tough, J. (1977). The development of meaning. London: George Allen and Unwin.

Trudge, J. & Caruso, D. (1988). Cooperative problem solving in the classroom: Enhancing young children's cognitive development. Young Children, 44 (1), pp. 46-52.

Velten, J. (1943). The growth of phonemic and lexical patterns in infant language. Language, 19, 281-292.

Weininger, O. (1979). Play and education: The basic tool for early childhood learning. Springfield, IL: Charles C. Thomas.

Youniss, J. (1981). A Revised Interpretation of Piaget (1932). In Brodzinsky, D. M., Golinkoff, R. M., & Sigel, I. E. (Eds.). New directions in Piagetian theory and practice. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.